

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,299	01/31/2002	Mindaugas F. Dautartas	23091/24 (ACT180)	2059
7590	04/23/2004		EXAMINER	
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			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)

- 4) ☐ Interview Summary (PTO-413)

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites "the optical device of claim 29 wherein the substrate and the lid comprise silicon, and the"; the statement is incomplete, this omission rendering the claim indefinite.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7, 8, 10, 12, 13, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobowitz et al. (U. S. Pat. 5,333,225).

Jacobowitz et al. discloses in Fig. 4 an optical submount comprising a substrate 4, a trench 33 in the substrate 4 for holding an optoelectronic device 19 on-edge; an

electrical connection pit 34 adjoining the trench; a metallization layer in the electrical connection pit (col. 9, ll. 22-25); and an optoelectronic device disposed on-edge in the trench, wherein the optoelectronic device has a contact pad soldered to the metallization layer; wherein there are at least two electrical connection pits 34; and wherein the electrical connection pits are disposed on the same side of the trench; wherein the electrical pit is at least partially filled with solder.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-6, 9, 11, 14-19, 21, and 23-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobowitz et al. in view of Sakaino et al. (U. S. Pat. 5,909,523).

Jacobowitz et al. discloses in Fig. 4 an optical submount comprising a substrate 4, a trench 33 in the substrate 4 for holding an optoelectronic device 19 on-edge; an electrical connection pit 34 adjoining the trench; a metallization layer in the electrical connection pit (col. 9, ll. 22-25); and an optoelectronic device disposed on-edge in the trench, wherein the optoelectronic device has a contact pad soldered to the metallization layer; wherein there are at least two electrical connection pits 34; and

wherein the electrical connection pits are disposed on the same side of the trench;
wherein the electrical pit is at least partially filled with solder.

Jacobowitz et al. discloses the claimed invention with the exception of a groove in the substrate adjoining the trench, an optical fiber disposed in the groove, and the structure further comprising a lid disposed over the substrate.

Sakaino et al. teaches in Fig. 15 a conventional optical submount that comprises a substrate; a trench in the substrate for holding an optoelectronic device on-edge; a groove in the substrate adjoining the trench; an optical fiber disposed in the groove; wherein the groove is perpendicular to the trench; wherein an optoelectronic device is disposed in the trench; wherein the optoelectronic device includes a contact pad, and the contact pad is soldered to the metallization layer; a lid disposed over the substrate; and the trench does not extend to an edge of the substrate; wherein the groove adjoining the trench is formed for the disclosed intended purpose of providing an area in which to mount a lens of the optoelectronic device; and the lid disposed over the substrate is taught for the disclosed intended purpose of enclosing the structure in a package.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a groove like the one taught by Sakaino et al. and to include in the structure a lid for the disclosed intended purposes of Sakaino et al. of providing an area in which to mount a lens of the optoelectronic device; and enclosing

Jacobowitz et al. further teaches the use of optical fiber in v-groove mounts on the optoelectronic device; that the substrate comprises <100> silicon.

With regards to the limitations of the trench being formed by a dicing saw or by a directional dry etching, and the connection pit being formed by an anisotropic wet etch it is noted that the presence of process limitations on product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to the product. *In re Stephens* 145 USPQ 656 (CCPA 1965). Thus, as both Jacobowitz et al. and Sakaino et al. show a trench in a substrate, and it is well known in the art that there are several methods of forming a trench, and that these methods result in a trench being formed at a desired location, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use any well known process to form the trench without resulting in a patentably distinct structure.

Response to Arguments

7. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ginette Peralta whose telephone number is (571)272-1713. The examiner can normally be reached on Monday to Friday 8:00 AM- 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571)272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GP

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SPE 2814